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| 10/539,366 | 06/15/2005 | Benno Tieke | NL 021391 | 4275 |

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P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

| EXAMINER | |
|---|---|
| YODICHKAS, ANEETA | |
| ART UNIT | PAPER NUMBER |
| 2627 | |

| MAIL DATE | DELIVERY MODE |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/539,366 | TIEKE ET AL. | |
| | Examiner | Art Unit | |
| | Aneeta Yodichkas | 2627 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2 and 4-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**Claims 1, 2, 4-7, 9 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Non-Patent Literature Recordable Compact Disc Systems, Part III: CD-RW, Volume 3: Ultra-Speed Version 1.0 to *Sony/Philips* in view of U.S. Patent No. 5,732,062 to *Yokoi et al*.

As to **claims 1 and 7**, *Sony/Philips* discloses a method or recording marks on an information layer and a recording device for recording marks on an information layer of a record carrier, the device and acts comprising of: wherein an even mark having a time length of nT is written by a sequence of n/2 pulses, where n denotes an integer value equal to 4, 6, 8, or 10 and T denotes a length of one period of a reference clock (Page II-3, section II.1.3.2, lines 3-5), where 1T is the start of the clock edge, or the reference clock, and wherein an odd mark having a time length of nT is written by sequence of (n-1)/2 pulses, where n denotes an integer value equal to 5, 7, 9 or 11(Page II-3, section II.1.3.2, lines 7-8), where integer $I_5$, $I_7$, $I_9$, and $I_{11}$ represent integer values equal to 5, 7, 9 or 11, wherein a last pulse in the sequence of pulses for writing an odd mark has a period $\Delta$1p longer than a last pulse in the sequence of pulses for writing an even mark (Page II-4, fig. II-2), where in the odd marks figure, it is shown that the last pulse is $\Delta$1

longer than that of the even marks figure, wherein a gap preceding the last pulse in the sequence of pulses for writing an odd mark has a period $\Delta$1g longer than a gap preceding the last pulse in the sequence of pulses for writing an even mark (Page II-4, fig. II-2), where in the odd marks figure, it's shown that the gap before the last pulse is $\Delta$1 longer than that of the even marks figure, wherein a cooling gap succeeding the last pulse in the sequence of pulses for writing an odd mark has a period $\Delta$2 longer than a cooling gap succeeding the last pulse in the sequence of pulses for writing an even mark (Page II-4, fig. II-2), where it is shown that in the odd marks figure that the cooling gap after the last pulse is $\Delta$2 longer than that of the even marks figure, and wherein a sum of the periods $\Delta$1p, $\Delta$1g, and $\Delta$2 is within a range from 0.7T to 1.1T (Page II-5, table II-1), where it is shown in the table that $\Delta$1 and $\Delta$2 have a range of lengths and when added together, they will be in the range of 0.7T to 1.1T.

*Sony/Philips* is deficient in disclosing irradiating an information layer with a pulsed radiation beam to record marks on said information layer, said information layer having a phase that is reversibly changeable between a crystal phase and an amorphous phase, and wherein the periods 1$\Delta$g and 1$\Delta$p have an unequal duration not equal to T.

However, *Yokoi* discloses irradiating an information layer with a pulsed radiation beam to record marks on said information layer, said information layer having a phase that is reversibly changeable between a crystal phase and an amorphous phase, and wherein the periods 1$\Delta$g and 1$\Delta$p have an unequal duration not equal to T (Fig. 6 and 7, column 14, lines 19-33, Fig. 32, column 37, lines 15-45), where the switching devices

(15-18) create the pulse radiation beam which records marks, making the phase interchangeable between a crystal phase and an amorphous phase and the periods 1∆g and 1∆p are unequal as shown in Fig. 32.

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to have modified a method of recording odd and even mark lengths as taught by *Sony/Phillips* by including a method of irradiating an information layer by changing the phase from a crystal phase to an amorphous phase as taught by *Yokoi*. The suggestion/motivation would have been in order to form recording marks and spaces on the information layer (Yokoi, Fig. 6 and 7, column 14, lines 19-33).

As to **claims 2 and 9**, *Sony/Philips* discloses the method and device, wherein the sum of the periods ∆1p and ∆1g is within a range from 0.25T to 0.75T (Page II-5, table II-1), where it is shown in the table that ∆1 has a range of lengths and when two of them are added together, they will be in the range of 0.25T to 0.75T.

As to **claims 4 and 10**, *Sony/Philips* discloses the method and device wherein a sum of the periods ∆3 and ∆4 is within a range from 0.7T to 1.1T (Page II-5, table II-1), where it is shown in the table that ∆1 has a range of lengths and when two of them are added together, they will be in the range of 0.7T to 1.1T.

*Sony/Philips* is deficient in disclosing a mark having a time length of 3T is written by a single pulse having a period ∆3 longer than the last pulse in the sequence of pulses for writing an even mark, and wherein a subsequent cooling gap has a period ∆4 longer than the cooling gap succeeding the last pulse in the sequence of pulses for writing an even mark.

However, *Yokoi* discloses a mark having a time length of 3T is written by a single pulse having a period $\Delta 3$ longer than the last pulse in the sequence of pulses for writing an even mark (Fig. 32, column 37, lines 33-40), where it's shown in the figure that in a length of 4T, the first pulse length is 1.5T, and the last pulse is 0.5T, which is 1/3 of 1.5T, and wherein a subsequent cooling gap has a period $\Delta 4$ longer than the cooling gap succeeding the last pulse in the sequence of pulses for writing an even mark (Fig. 38, column 45, lines 49-56), where as shown in the figure, the first cooling pulse of a 6T mark can be longer depending on the value of $\alpha$ than the last cooling pulse. In addition, the same motivation is used as the rejection in claim 1.

As to **claim 5**, *Sony/Philips* discloses the method, wherein a duration of the last pulse in the sequence of pulses for writing an even mark (Tp) is substantially equal to 7.2 ns (Page II-5, table II-1, page II-4, fig. II-2), where Tmp is the length of the last pulse of an even mark as shown in Fig. II-2; wherein the duration of the cooling gap succeeding the last pulse in the sequence of pulses for writing an even mark (Tc) is substantially equal to 5/8T (Page II-5, table II-1), where Tc is in the range that includes 5/8T or 0.625T; the period A2 has a duration substantially equal to 3/8T (Page II-5, table II-1), where $\Delta 1$ has a range as shown in the table and 3/8T, or 0.375T, falls in that range; wherein the period A3 has a duration substantially equal to 7/8T - 7.2 ns (Page II-5, table II-1), where 7/8T or 0.875T divided by 3 is in the range of the table shown for $\Delta 1$ and Tmp is 7.2 ns; and wherein the period A4 has a duration substantially equal to 5/8T (Page II-5, table 1-11), where 5/8T or 0.625T divided by 4 is in the range of $\Delta 1$ in the table.

As to **claim 6**, *Sony/Philips* discloses the method, wherein a start of the single pulse for writing a mark having a time length of 3T relative to the start of a period of the reference clock corresponds to the start of the first pulse in the sequence of pulses for writing an even mark relative to the start of a period of the reference clock (Page II-3, section II.1.3.2, lines 3-5), where the clock edge at 1T is the reference clock and it is the start of the first pulse.

**Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Non-Patent Literature Recordable Compact Disc Systems, Part III: CD-RW, Volume 3: Ultra-Speed Version 1.0 to *Sony/Philips* in view of U.S. Patent No. 5,732,062 to *Yokoi et al.* as applied to claim 1 above, and further in view of U.S. Patent No. 6,515,949 to *Masaki et al.*

As to **claim 8**, *Sony/Philips* discloses the limitations as taught in claims 1 and 10 above as well as the pattern of pulses and gaps between the pulse in a sequence of pulses is based on a set of write parameters ($\Delta$1p, $\Delta$1g, $\Delta$2, $\Delta$3, $\Delta$4) provided to the control unit (Page II-5, table II-1), where 1$\Delta$ or 1$\Delta$p and $\Delta$1g are $\Delta$1 in the table, $\Delta$2 is shown in the table, and $\Delta$3 and $\Delta$4 are multiples of $\Delta$1 and $\Delta$2, respectively.

*Sony/Philips* is deficient in disclosing a recording a control unit configured to control the power of the radiation beam and to provide sequences of pulses for recording the marks; an identification unit configured to identify the record carrier, and a selection unit configured to select a set of write parameters from a collection of sets of write parameters based on an identification of the record carrier and to provide the control unit with the selected set of write parameters wherein the selection unit is further

configured to provide the control unit with a default set of write parameters when the identification unit is incapable of identifying the record carrier or the selection unit is incapable of selecting a set of write parameters from the collection of sets of write parameters based on the identification of the record carrier or if the identification unit and the selection unit is incapable of said identifying and selecting, respectively.

However, *Yokoi* discloses the limitations as taught in claims 1 and 10 above as well as a control unit configured to control the power of the radiation beam and to provide sequences of pulses for recording the marks (Fig. 6 and 7, columns 13-14, lines 61-18), where the control signals and the switching devices is the control unit and it controls the power radiation to create pulses for recording marks as shown in Fig. 7.

*Sony/Philips* and *Yokoi* are deficient in disclosing an identification unit configured to identify the record carrier, and a selection unit configured to select a set of write parameters from a collection of sets of write parameters based on an identification of the record carrier and to provide the control unit with the selected set of write parameters wherein the selection unit is further configured to provide the control unit with a default set of write parameters when the identification unit is incapable of identifying the record carrier or the selection unit is incapable of selecting a set of write parameters from the collection of sets of write parameters based on the identification of the record carrier or if the identification unit and the selection unit is incapable of said identifying and selecting, respectively.

However, *Masaki* discloses an identification unit (182) configured to identify the record carrier (Fig. 6, column 11, lines 63-64), where control unit (182) is the

identification unit that reads the ID information, and a selection unit (160) configured to select a set of write parameters from a collection of sets of write parameters based on an identification of the record carrier and to provide the control unit with the selected set of write parameters (Fig. 6, column 12, lines 57-61), where optimum condition setting processing unit (160) sets the optimum write parameters based on ID information from control unit (182), wherein the selection unit (160) is further configured to provide the control unit (182) with a default set of write parameters when the identification unit is incapable of identifying the record carrier or the selection unit is incapable of selecting a set of write parameters from the collection of sets of write parameters based on the identification of the record carrier or if the identification unit and the selection unit is incapable of said identifying and selecting, respectively (Fig. 6, column 12, lines 56-61), where the default write parameters are used when the record carrier is unidentifiable and are selected by setting processing unit (160).

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to have modified the method of recording marks on an information layer with a reference clock as taught by *Sony/Philips* and *Yokoi* by including an identification unit to read ID information off of a record carrier as taught by *Masaki.* The suggestion/motivation would have been in order to determine the optimum data power in the form of a proportional coefficient relative to the default write power (Masaki, column 12, lines 62-65).

### *Response to Arguments*

Applicant's arguments with respect to claims 1, 2 and 4-10 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aneeta Yodichkas whose telephone number is (571) 272-9773. The examiner can normally be reached on Monday-Thursday 8-5, alternating Fridays, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. Agustin/
Primary Examiner, Art Unit 2627

/A.Y./
10/16/09